32692
Customer Number

Patent
Case No.: 42698US059

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	MELBYE, WILLIAM L.		
Application No.:	10/689111	Group Art Unit:	3677
Filed:	October 20, 2003	Examiner:	James R. Brittain
Title:	A METHOD FOR MAKING A MUSHROOM-TYPE HOOK STRIP FOR A MECHANICAL FASTENER		

RESPONSE TO THE NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
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August 8, 2006 — Date

I. Hass — Signed by: Irina Hass

Dear Sir:

This is in response to the Notification of Non-Compliant Appeal Brief dated July 14, 2006, in the above-identified application.

A Supplemental Appeal Brief is attached and expends on the section: "Related Appeal and Interferences". In accordance with the instructions in the Notice, copies of the Decisions on Appeal are submitted therewith.

It is believed that no fee is due; however, in the event a fee is required, please charge the fee to Deposit Account No. 13-3723.

Respectfully submitted,

August 8, 2006
Date

By: _____
William J. Bond, Reg. No.: 32,400
Telephone No.: 651-736-4790

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

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Case No.: 42698US059

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Filed:	October 20, 2003	Examiner:	James R. Brittain
Title:	A METHOD FOR MAKING A MUSHROOM-TYPE HOOK STRIP FOR A MECHANICAL FASTENER		

SUPPLEMENTAL BRIEF ON APPEAL

Mail Stop: Appeal Brief-Patents
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August 8, 06
Date

Signed by: Irina Hass

Dear Sir:

This is an Supplemental Appeal from the Office Action mailed on January 13, 2006, finally rejecting claims 1-12.

A Notice of Appeal in this application was faxed into the USPTO on January 31, 2006.

The fee required under 37 CFR § 41.20(b)(2) for filing an appeal brief should be charged to Deposit Account No. 13-3723.

REAL PARTY IN INTEREST

The real party in interest is 3M Company (formerly known as Minnesota Mining and Manufacturing Company) of St. Paul, Minnesota and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related pending appeals or interferences. However U.S. Patent No. 6,635,212 was the subject of an appeal decision dated February 27, 2003 reversing the 35 U.S.C. 103 rejection, and upholding the examiner on a obviousness type double patenting rejection, U.S. Patent No. 6,558,602 was the subject of an appeal decision dated November 21, 2002 and U.S. Patent No. 5,607,635 was the subject of an appeal decision dated September 5, 1995 in both cases the examiner was reversed.

This application is a continuation of U.S. Application No. 09/503,452, filed February 14, 2000, now U.S. Patent No. 6,635,212, which is a continuation of U.S. Application No. 08/766,544, filed December 11, 1996, now U.S. Patent No. 6,558,602; which is a divisional of U.S. Application No. 07/789,594, filed November 8, 1991, now U.S. Patent No. 5,607,635 which is a divisional of U.S. Application No. 07/585,990, filed September 21, 1990, now U.S. Patent No. 5,077,870.

STATUS OF CLAIMS

Claims 1-12 are pending. Claims 1-12 stand rejected.

STATUS OF AMENDMENTS

No amendments have been filed after the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The claims at issue concern a flexible low cost hook material such as used in disposable products where the backing and hooks are integrally formed in a manner that allows the backing to be very thin and flexible.

Claim 1.

A flexible hook strip that can be used in a hook-and-loop mechanical fastener (e.g. page 1, lines 9-11; page 3, lines 7-11 etc.) comprising:

- a homogeneous flexible backing of thermoplastic resin (e.g. page 3, lines 15-17; page 3, lines 25-31);
- having a thickness from 0.1 to 0.5 mm (e.g. page 6, line 12);
- and, integral formed with said backing, an array of upstanding stems (e.g. page 3, lines 16 and 30-31);
- distributed across at least one face of the backing (e.g. page 3, lines 16-17);
- each of said stems having a base adjacent said backing (e.g. page 3, lines 30-31; Figs. 1 and 2; examples);
- and a head at the end of the stem opposite said backing (e.g. page 4, line 1; Figs. 1 and 2; examples);
- said stems having a molecular orientation as evidenced by a birefringence value of at least 0.001(e.g. page 3, line 6 and page 11, table 1).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Sole Ground of Rejection

Claims 1-12 stand rejected under 35 USC § 103(a) as purportedly unpatentable over the combined teachings of three unrelated patents Kalleberg (US Patent No. 4290174), Nealis(US Patent No 3,270,408) and Rajala (US Patent No. 4861399).

ARGUMENT

First Ground of Rejection

Claim 1

The claimed hook fastener has the following limitations

1) homogeneous flexible backing
2) thermoplastic backing
3) Backing has a thickness of 0.1 to 0.5 mm
4) Integrally formed upstanding stems on the backing

5) Stems distributed across the face of the backing
6) Base of stem adjacent the backing
7) Head on end of stem opposite the backing
8) Stems have a birefringence of at least 0.001

The examiner rejection states that the Primary reference Kallenberg teaches all limitation except 1), 3) and 8) . Applicants agree these limitations are missing in Kallenberg. Limitation 4) is also missing but the examiner appears to be ignoring this limitation. Apparently applicants are not allowed to claim the stems and the backing are an integral formed structure, although this is a reference to the method of manufacture it has a physical manifestation that the examiner is not simply able to ignore and is the key to the invention.

As stated in the "Summary of the Invention" the "invention provides a mushroom-type hook strip for a mechanical fastener…which hook strip affords the advantages of prior mushroom-type hook strips while being less expensive to manufacture". Prior expensive methods to manufacture where methods like those of Kallenberg, where the hooks were formed of filaments knitted into a backing. In fact in identifying the invention the terms of the claims are defined in view of the disclosure of Kallenberg:

> **Briefly, the novel mushroom-type hook strip comprises a homogeneous backing of thermoplastic resin and, integral with backing, an array of upstanding stems distributed across at least one face of the backing, each having a mushroom head, said stems having a molecular orientation as evidenced by a birefringence value of at least 0.001. In contrast, the backing of the mushroom-type hook strip of the Kalleberg patent is not homogeneous because of the bight portions of the monofilaments, even when the monofilaments and backing are identical in chemical composition and fused together.**

Simply put the hooks of Kallenberg are clearly defined by applicants as not integral with the backing as well as the backing as well as not being homogenous.

The stems are integral with the backing as they are formed by a simultaneous extrusion process(note page 3 lines 25-30). This provides a backing with integral stems as defined by

applicants in their specification. The examiners position appears that the term integral or integrally formed has no meaning, however this can not be the case. A material that is all one material and formed by a single extrusion step is very different than a material that has feature that are added by fusing, adhesive or knitting(as in Kallenberg). This is not a process feature it is a structural feature. If the examiner is simply allowed to ignore terms as used and defined by an applicant and either assign a meaning independent of how the term is used and defined by an applicant or dismiss the limitation , the ability for an applicant to define their invention becomes impossible.

The other missing limitations of Kallenberg are randomly grabbed from Nealis and Rajala.

Kallenberg is a mushroom type hook fastener as is already acknowledged by applicants , but it is formed by a complex and costly method where monofilaments are guided and formed by striker bars 39 and platens 31 to be first formed into U shaped forms that are then pressed into two opposing softened polymeric backings. The monofilaments are then cut by a hot wire which separates the two backings while forming mushroom heads on the monofilaments.

To address the limitations that the examiner does acknowledge as missing in Kallenberg first he goes to Nealis, to argue that the entire process of Kallenberg could be tossed out the window and one could instead use the process of Nealis., which would give one a homogeneous backing. The problem is that Nealis is a method of forming a zipper. In order to justify this the examiner uses the motivation from applicants specification making a low cost mushroom-type hook The problem is that Nealis is not a hook and describes forming their zipper material using conventional molding techniques. But nowhere in the art are conventional molding techniques taught as suitable for forming a sheet of hook material as taught in Kallenberg. Namely a film backing with an array of hooks extending in both the length and width. There is no way taught in the art to accomplish this. This is simple ignored by the examiner.

For next missing limitation Kallenberg on the backing thickness the rejection shifts back to a knitted type hook fastener. But this ignores again the vastly different methods used by these two patents. In Kallenberg it is essential that the monofilaments be embedded into the softened backing . A thin flexible backing would clearly not be desirable.

It is respectfully submitted that the rejection of the examiner based on the combination of Kallenberg, Nealis and Rajala et al. may only be made by impermissible hindsight reconstruction, that is, by picking and choosing from each document that which supports these rejections without any motivation other than that gleaned from applicants specification. One cannot "simply [to] engage in a hindsight reconstruction of the claimed invention, using the Applicant's structure as a template and selecting elements from references to fill the gaps." In re Gorman, 933 F2d 982, 18 U.S.P.Q.2d 1885, 1888 (Fed. Cir. 1991).

As recently reasserted in Princeton Biochemicals, Inc. v. Beckman Coulter, Inc. (Fed. Cir., No. 04-1493, June 9, 2005), 35 U.S.C. §103 specifically requires an assessment of the claimed invention "as a whole." This "as a whole" assessment of the invention requires a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the various elements from the cited references and combined them in the claimed manner. In other words, 35 U.S.C. §103 requires some suggestion or motivation, before the invention itself, to make the new combination. See In re Rouffet, 149 F.3d 1350, 1355-56 (Fed. Cir. 1998).

This "as a whole" instruction in 35 U.S. §103 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might successfully break an invention into its component parts, then find a reference corresponding to each component. This line of reasoning would import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components. Further, this improper method would discount the value of combining various existing features or principles in a new way to achieve a new result - often the essence of invention. Ruiz v. A.B. Chance Co., 357 F.3d 1270, 1275 (Fed. Cir. 2004). Simply identifying the various elements of a claim in the cited references does not render a claim obvious. Ruiz, 357 F.3d at 1275. Instead, 35 U.S. §103 requires some suggestion or motivation in the prior art to make the new combination. Rouffet, 149 F.3d at 1355-56. Applicants submit that the Examiner has engaged in an improper part by part analysis of the claimed produced, and, in particular, in making the current rejections based on picking out of context isolated elements of Kallenberg, in combination with Nealis and Rajala et al..

Claims 2 and 12

The limitations from these claims can not be found in Kallenberg. The monofilaments of Kallenberg have no taper.

Claim 3

The limitation from this claim can not be found in Kallenberg. The monofilaments have no fillet.

Claim 4

Kallenberg does teach this and this claim should stand or fall with claim1.

Claim 5

Kallenberg does teach this and this claim should stand or fall with claim1.

Claim 6

Kallenberg does teach this and this claim should stand or fall with claim1.

Claim 7-11

These claims should stand or fall with claim1.

CONCLUSION

For the foregoing reasons, appellants respectfully submit that the Examiner has erred in rejecting this application. Please reverse the Examiner on all counts.

Respectfully submitted,

August 8, 2006
Date

By: _____
William J. Bond, Reg. No.: 32,400
Telephone No.: 651-736-4790

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

CLAIMS APPENDIX

THESE ARE THE CLAIMS WE SENT IN ON 10/28/05 RESPONSE

1. (currently amended) A flexible hook strip that can be used in a hook-and-loop mechanical fastener, said strip comprising a homogeneous flexible backing of thermoplastic resin having a thickness of from 0.1 to 0.5 mm and, ~~integral~~ integrally formed with said backing, an array of upstanding stems distributed across at least one face of the backing, each of said stems having a base adjacent said backing and a head at the end of the stem opposite said backing, said stems having a molecular orientation as evidenced by a birefrigence value of at least 0. 001.

2. (original) A hook strip as defined in claim 1 wherein the stems are of substantially identical shape and are each slightly tapered to a smaller cross sectional area adjacent the head than at the base.

3. (original) A hook strip as defined in claim 2 wherein said hook strip has a fillet at the base of each of said stems.

4. (original) A hook strip as defined in claim 3 wherein said stems are substantially circular in cross section.

5. (original) A hook strip as defined in claim 1 wherein said stems are of substantially uniform height and said mushroom heads are of substantially uniform diameter.

6. (original) A hook strip as defined in claim 5 wherein said stems are from 0.5 mm to 5 mm in height.

7. (original) A hook strip as defined in claim 1 wherein said backing is formed of a polypropylene or a copolymer of polypropylene and polyethylene.

8. (original) A hook strip as defined in claim 7 wherein said stems are substantially circular in cross section and the ratio of the diameters of the mushroom head and the stem of each of said stems is from 1.5:1 to 3:1.

9. (original) A hook strip as defined in claim 1, wherein said backing of the hook strip is substantially continuous and is wound up into a roll for convenient storage and shipment.

10. (original) A hook strip as defined in claim 1 wherein the spacing of the headed stems is so configured that two pieces of the hook strip can interengage to provide a mechanical fastener.

11. (original) A hook strip as defined in claim 10 wherein the headed stems are of substantially identical size and shape and the spacing between adjacent heads along said hook strip is less than the diameter of the heads.

12. (original) A hook strip as defined in claim 11 wherein said stems are substantially circular in cross section and the stems are each slightly tapered to a smaller diameter adjacent the head than at the base.

4,640,889
6,558,602

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

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PAT & TM OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 42

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM L. MELBYE, SUSAN K. NESTEGARD, LEIGH E. WOOD, MARVIN D. LINDSETH and DALE A. BYCHINSKI

Appeal No. 2000-2013
Application No. 08/766,544

HEARD: November 6, 2002

Before GARRIS, WALTZ, and MOORE, Administrative Patent Judges.

WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's refusal to allow claims 17 through 21, 26 and 27 as amended subsequent to the final rejection (see the amendment dated Mar. 21, 2000, Paper No. 32, entered as per the Answer, page 2, ¶(4)).[1] Claims 17-21, 26 and 27 are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 134.

[1]All reference to the Answer is to the Supplemental Examiner's Answer dated May 22, 2002, Paper No. 39.

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According to appellants, the invention is directed to a process for forming mechanical fastener hook materials by deforming, without the need for supports, the tops of thermoplastic projections using heat and pressure to form hook heads (Brief, page 6). A copy of illustrative independent claim 17 is attached as an Appendix to this decision.

The examiner has relied upon the following references as evidence of obviousness:

Doleman et al. (Doleman)	3,590,109	June 29, 1971
Hamano	3,718,725	Feb. 27, 1973

The claims on appeal stand rejected under the first paragraph of 35 U.S.C. § 112, "as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art" that appellants had possession of the claimed subject matter (Answer, page 4). The claims on appeal also stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hamano in view of Doleman (*id.*).

We reverse all of the rejections on appeal essentially for the reasons stated in the Brief, Reply Brief, and as set forth below.

OPINION

A. The Rejection under 35 U.S.C. § 112, ¶1

The examiner finds that the negative limitation added during prosecution of claim 17 is not supported by the original disclosure (Answer, page 4). The examiner finds that there is no suggestion in the original disclosure that appellants had possession of the concept of forming "without supports for the projections" in the context of appellants' own process (*id.*).

Whether the requirement for an adequate written description has been met is a question of fact and thus depends on the particular facts of this appeal. *See Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 865, 26 USPQ2d 1767, 1774 (Fed. Cir. 1993).[2] Appellants and the examiner agree that there is no literal basis for the negative claim limitation recited in claim 17 on appeal (Brief, page 9, footnote 1; Answer, page 6). However, the initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention, regardless of the ground, rests with the examiner. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Therefore it is incumbent

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[2] *See also Ex parte Parks*, 30 USPQ2d 1235, 1236 (Bd. Pat. App. & Int. 1994); *cf., Ex parte Grasselli*, 231 USPQ 393, 394 (Bd. Pat. App. 1983), *aff'd mem.*, 738 F.2d 453 (Fed. Cir. 1984).

upon the examiner to establish that the originally filed disclosure would not have reasonably conveyed to one of ordinary skill in the art that appellants had possession of the subject matter now in question, and not merely establish that there is no literal support for the now claimed subject matter. *See In re Edwards*, 568 F.2d 1349, 1351-52, 196 USPQ 465, 467 (CCPA 1978).

We determine that the examiner has not met the initial burden of establishing a *prima facie* case of unpatentability. The examiner states that the original specification and drawings omit "rod-like supports," as described by Hamano, but do not reasonably convey that "all forms of support," as broadly claimed, can be excluded from the claimed subject matter (Answer, page 7).[3] However, as correctly argued by appellants (Brief, pages 9-10), the originally filed disclosure, including the specification, the examples in the specification, and drawings, teaches projections without any form of support (e.g., see Figures 3A, 3B, and the specification, page 9, ll. 16-18). Appellants also discuss Hamano at page 2, ll. 14-23, of the specification, indicating that Hamano

[3]The examiner also argues that appellants are claiming the lack of supports "into and through a gap" while Hamano does not teach any supports for the only embodiment which clearly defines a gap between surfaces (Answer, page 7). However, we agree with appellants (Reply Brief, page 4) that this argument does not appear to be relevant to the issue under 35 U.S.C. § 112.

teaches the use of rods to maintain the upstanding position of the rows of loops. Furthermore, appellants teach that, due to the qualities of molecular orientation of the thermoplastic material, the stems of the presently claimed projections "remain erect during the deforming step g) which preferably involves the application of heat to the stem tips." See the specification, page 5, ll. 25-32. Accordingly, we determine that these teachings from the original disclosure would have reasonably conveyed to one of ordinary skill in this art that appellants were in possession of the claimed process without the need for any supports for the projections.

For the foregoing reasons, we determine that the examiner has not met the initial burden of establishing failure to fulfill the written description requirement of 35 U.S.C. § 112. Accordingly, the rejection of claims 17-21, 26 and 27 under 35 U.S.C. § 112, first paragraph, is reversed.

B. The Rejection under 35 U.S.C. § 103(a)

The examiner finds that Hamano discloses the "basic claimed process" with the exception, as discussed above, that Hamano teaches the use of rods or mandrels as supports for the loops or projections (Answer, page 4). The examiner further finds that Hamano teaches moving a web backing into a gap without any supports for the projections, although this feature is taught in an

embodiment where solvent is used to soften the tip portion of the projections, not where heat is used (*id.*). From these findings, the examiner concludes that it would have been obvious to have moved a web backing into a gap without any supports for the projections while using a heated roll to reshape the projections "since Hamano suggests that reshaping the projections using solvent softening or heating are equivalent softening alternatives." Answer, page 5. The examiner also concludes that it would have been obvious to omit the solvent softening step and provide a heat softening step "for the economic and environmental benefit of eliminating solvent emissions into the atmosphere." *Id.*

As correctly argued by appellants (Brief, page 11; Reply Brief, page 4), Hamano does not teach that the chemical treatment is equivalent to the heat softening/pressure embodiment. Hamano discusses and claims each embodiment separately (see col. 1, ll. 23-31; col. 2, ll. 17-34; and claims 1 and 3). Hamano teaches that the loops enter the solvent bath upside down, exposing only the summits of the loops to the solvent (col. 2, ll. 24-27 and Figure 8). Thus the chemical treatment embodiment of Hamano, while accomplishing the same function as the heat treatment embodiment, has not been disclosed or suggested as an equivalent process. On

this record,[4] the effect of the different process steps in the chemical treatment embodiment has not been shown to be "equivalent" to the heat treatment embodiment and the examiner has not presented any convincing evidence or reasoning to support the determination that these two embodiments of Hamano are "equivalent." Although Hamano never expressly discloses whether supports are used or necessary for the loops of the chemical treatment embodiment, one of ordinary skill in this art would have reasonably expected that supports are unnecessary since the loops enter into the solvent bath in an upside down position (see Figure 8). However, it has not been shown that one of ordinary skill in this art would have reasonably expected that supports would have been unnecessary in the heat treatment embodiment of Figures 1-7. As also correctly argued by appellants (Brief, page 11), the examiner is ignoring the specific teachings of Hamano that supports must be used to "maintain the loops in their upstanding position" during the heat treatment embodiment. Col. 1, ll. 62-66; see also claim 1.

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[4]The examiner's statements regarding "molecular mobility" and the equivalence of solvent softening and heat softening have been considered (Answer, page 8). However, these statements have not been supported by any evidence on this record, as the vague reference to "polymer textbooks" (Answer, page 8) has not been made of record.

The examiner has also not supplied any convincing evidence or reasoning to support the conclusion that it would have been obvious to omit the solvent softening step and provide a heat softening step due to economic and environmental considerations (Answer, page 5). The examiner has not factually established that the solvent emissions would have been harmful to the atmosphere or that heating is more economical than use of a solvent bath.

The examiner has applied Doleman for the teaching of forming a thermoplastic web backing from the same material as the upstanding projections (Answer, page 5). Accordingly, Doleman does not remedy the deficiencies discussed above in Hamano.

For the foregoing reasons and those stated in the Brief and Reply Brief, we determine that the examiner has failed to establish a *prima facie* case of obviousness in view of the reference evidence. Therefore the examiner's rejection under 35 U.S.C. § 103(a) cannot be sustained.

C. Summary

The rejection of claims 17-21, 26 and 27 under the first paragraph of 35 U.S.C. § 112 is reversed. The rejection of claims 17-21, 26 and 27 under 35 U.S.C. § 103(a) over Hamano in view of Doleman is reversed.

The decision of the examiner is reversed.

REVERSED

BRADLEY R. GARRIS)
Administrative Patent Judge)
)
)
)
THOMAS A. WALTZ) BOARD OF PATENT
Administrative Patent Judge) APPEALS
) AND
) INTERFERENCES
)
)
)
JAMES T. MOORE)
Administrative Patent Judge)

TAW/jrg

Appeal No. 2000-2013
Application No. 08/766,544

WILLIAM L. HUEBSCH
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APPENDIX

17. A method of continuously forming a smooth hook strip for a hook-and-loop type mechanical fastener comprising:

a) providing a web backing having an array of upstanding substantially uniformly spaced thermoplastic projections which web backing and projections are formed of the same thermoplastic material, the thermoplastic material having a flow temperature, each projection having a stem portion and a top portion, said projection having a given first cross-sectional dimension, and height, said web backing and projections combined having a given second height;

b) providing a gap formed by a first surface and a second surface, the gap being less than the second height, a first surface being heated to a temperature above the flow temperature of the thermoplastic material forming the projections; and

c) moving the web backing into and through the gap without any supports for the projections such that the thermoplastic material forming the top portion of the projections are deformed, such that the projections have a second cross-sectional dimension and height which height is less than the first height and which second cross-sectional dimension is larger than the first cross-sectional dimension, by the heated surface under pressure, providing hooks with upstanding stem portions and hook heads having a smooth upper surface, said hooks formed by the gap having a height of from 0.5 to 5 mm and the ratio of the height of the hook to the diameter of the stems being from 2:1 to 10:1.

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte WILLIAM L. MELBYE, SUSAN K. NESTEGARD, LEIGH E. WOOD, MARVIN D. LINDSETH and DALE A. BYCHINSKI

Appeal No. 94-3953
Application 07/789,594[1]

ON BRIEF

Before GOLDSTEIN, JOHN D. SMITH and GARRIS, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of claims 13, 15 and 16 which are all of the claims remaining in the application.

[1] Application for patent filed November 8, 1991. According to applicants, the application is a division of Application 07/585,990, filed September 21, 1990, now Patent No. 5,077,870, granted January 7, 1992.

The subject matter on appeal relates to a method of making a mushroom-type hook strip by continuously injecting into the cavities of a rotating mold a molten, molecularly orientable thermoplastic resin and continuously cooling the mold to cause the molten resin to become molecularly oriented while it is filling the cavities as evidenced by a birefringence value of at least 0.001 in the solidified resin after it is removed from the mold cavities. Further details of this appealed subject matter are set forth in illustrative claim 13 which reads as follows:

13. A method of making a mushroom-type hook strip that can be used in a hook-and-loop mechanical fastener, which method uses a mold that is cylindrical and has cavities that are the negatives of an array of only upstanding stems, said method comprising the steps of

a) rotating the mold on its axis,

b) continuously evacuating air from the cavities,

c) continuously injecting a molten, molecularly orientable thermoplastic resin into the evacuated cavities in excess of the amount that would fill the cavities, which excess forms a layer of resin overlying the cavities,

d) continuously cooling the mold at the walls of the evacuated cavities to cause the molten resin to become molecularly oriented while it is filling the cavities as evidenced by a birefringence value of at least 0.001 in the solidified resin after it is removed from the cavities,

e) allowing the injected resin to solidify,

f) continuously stripping from the mold the solidified resin layer as a backing and integral array of upstanding stems having tips at their ends opposite the backing, and

g) deforming the tips of the stems by applying heat to the tips of the stems to produce mushroom heads at the ends of the stems opposite the backing.

The references relied upon by the examiner as evidence of obviousness are:

Pearson	3,192,589	Jul. 6, 1965
Wisotzky	3,235,438	Feb. 15, 1966
Nealis	3,270,408	Sep. 6, 1966

Injection Molding Handbook, edited by Dominick V. Rosato et al., Van Nostrand Reinhold Co., New York:1986, pages 504-6, 596, 619-21, 753-6.

Claims 13, 14 and 16 stand rejected under 35 USC 103 as being unpatentable over the Injection Molding Handbook in view of Nealis or Pearson and further in view of Wisotzky.

We refer to the Brief and to the Answer for a complete exposition of the respective viewpoints advanced by the appellants and by the examiner concerning the above-noted rejection.

Having carefully studied the record before us, we conclude that the reference evidence adduced by the examiner fails to establish a prima facie case of obviousness within the meaning of 35 USC 103. It follows that we cannot sustain the § 103 rejection under consideration. Our reasons for this conclusion are set forth below.

We generally agree with the appellants' fundamental position that the applied prior art contains no teaching or suggestion of making a mushroom-type hook strip via a method which includes the molecular orientation and birefringence features defined in step d) of appealed claim 13. It is the examiner's viewpoint that the rotating mold process described in the Handbook would necessarily cause molecular orientation and accordingly that using this process to make mushroom-type hook strips of the type taught by Nealis or Pearson would result in a molecularly oriented product as required by the claims on appeal. We cannot agree.

While the Handbook discusses molecular orientation, there is nothing in this discussion which would have indicated to one with ordinary skill in the art that molecular orientation would be a desirable feature in mushroom-type hook strips. Similarly, while Nealis and Pearson disclose mushroom-type hook strips, these disclosures contain no suggestion that molecular orientation would be a desirable feature for such products. On the other hand, we believe the teaching on page 620 of the Handbook reference would have suggested to an artisan with ordinary skill that molecular orientation would <u>not</u> be desirable in a mushroom-type hook strip. An excerpt from this teaching is reproduced below:

> Generally orientation improves many properties in the direction of flow, but correspondingly sacrifices them in the transverse direction (51). In a limited number of products, molders have succeeded in orienting these effects to improve their products, notably in blow-molding of bottles; but in most cases, orientation has produced serious weakening of properties in important transverse directions, harming end-use properties and requiring modification of design or process to minimize such harmful effects. One of the most frequent problems is dimensional instability, particularly thermal shrinkage as the low-entropy oriented state tends to revert to a high-entropy random amorphous state. Another frequent problem is splitting along lines parallel to the flow axis, due to weak attractive forces between molecules lying mainly parallel to the flow axis.

In our opinion, the above quoted disclosure would have suggested to an artisan with ordinary skill that molecular orientation in a mushroom-type hook strip could result in numerous problems including "serious weakening of properties in important transverse directions". Concerning this matter, it is apparent from Nealis (e.g., see Figure 2) and Pearson (e.g., see Figures 1 and 2) that mushroom-type hook strips are subjected to forces in the transverse direction during engagement and disengagement operations. For these reasons, we think the Handbook reference would have suggested to an ordinarily skilled artisan that, in a process of making a mushroom-type hook strip, molecular orientation of the product should be avoided or at least minimized via the techniques described on the right hand side of Handbook page 620.

In conclusion, the prior art applied by the examiner contains no teaching or suggestion concerning the desirability and thus the obviousness of making a mushroom-type hook strip via a method which includes the molecular orientation and birefringence features claimed by the appellants. On the contrary, it is our perception that the applied prior art would have suggested that molecular orientation would not be desirable in a mushroom-type hook strip. Under these circumstances, we cannot sustain the examiner's above noted § 103 rejection of the claims on appeal.

The decision of the examiner is reversed.

REVERSED

MELVIN GOLDSTEIN)
Administrative Patent Judge)
)
)
JOHN D. SMITH) BOARD OF PATENT
Administrative Patent Judge) APPEALS
) AND
) INTERFERENCES
)
BRADLEY R. GARRIS)
Administrative Patent Judge)

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM L. MELBYE,
SUSAN K. NESTEGARD,
LEIGH E. WOOD,
MARVIN D. LINDSETH, and
DALE A. BYCHINSKI

Appeal No. 2002-0846
Application No. 09/503,452

HEARD: FEBRUARY 6, 2003

Before GARRIS, LIEBERMAN, and PAWLIKOWSKI, Administrative Patent Judges.

PAWLIKOWSKI, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 17-25. Claims 1-16 have been canceled.

Claim 17 is illustrative of the subject matter on appeal and is set forth below:

17. A method of continuously forming a smooth hook strip for a hook-and-loop type mechanical fastener consisting essentially of:

a) providing a web backing having an array of upstanding substantially uniformly spaced thermoplastic projections which web backing and projections are formed of the same thermoplastic material, the thermoplastic material having a flow temperature,

each projection having a stem portion and a top portion, said projection having a given first cross-sectional dimension, and height, said web backing and projections combined having a given second height;

b) providing a gap formed by a first surface and a second surface, the gap being less than the second height, a first surface being heated to a temperature above the flow temperature of the thermoplastic material forming the projections; and

c) moving the web backing into and through the gap such that the thermoplastic material forming the top portion of the projections are deformed, such that the projections have a second cross-sectional dimension and height which height is less than the first height and which second cross-sectional dimension is larger than the first cross-sectional dimension, by the heated surface under pressure, providing hooks with upstanding stem portions and hook heads having a smooth upper surface.

The examiner relies upon the following references as evidence of unpatentability:

Doleman et al. (Doleman)	3,590,109	June 29, 1971
Hamano	3,718,725	Feb. 27, 1973

Claims 17-25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hamano in view of Doleman.

Claims 17-25 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over certain claims of co-pending Application No. 08/766,544 in view of Hamano. We refer to pages 2-3 of the answer regarding the identification of the certain claims of co-pending Application No. 08/766,544.

On page 2 of the answer, the examiner indicates that co-pending Application No. 08/766,544 is currently under appeal. Appeal No. 2000-2013 is the decision in connection with this application.

Appellants submit that the appealed claims do not stand or fall together and that claims 17, 22, 23, and 24 should be considered separately. Hence, we consider each of these claims in this appeal. 37 CFR § 1.192(c)(7)(8)(2000).

For the reasons set forth below, we will reverse the rejection involving Hamano in view of Doleman. We will sustain the provisional rejection under the judicially created doctrine of obviousness-type double patenting.

OPINION

I. The rejection involving Hamano in view of Doleman

Appellants indicate that the claims as drafted use the transitional language "consisting essentially of", which limits their process to the steps recited, and excludes process steps that would have a material affect on the process as claimed. Appellants state that in this respect the claims would at least exclude the supporting rods required in Figures 1-7 of Hamano.

On pages 9-10 of the answer, the examiner disagrees and states that the rods in Hamano are only used to maintain the loop in their upstanding position, and states that nowhere does Hamano suggests that the rods support the upstanding stem after a loop is cut. The examiner concludes that Hamano does not use the rods in any manner that would materially affect the reshaping of the tips of the upstanding projections provided by the cutting step.

Our comments on this issue are set forth below.

We note that the language "consisting essentially of," renders a method claim open only to inclusion of steps that do not materially affect the basic and novel characteristics of the

claimed method. See Ex parte Hoffmann, 12 USPQ2d 1062, 1063-64 (BPAI 1989).

Here, we are not convinced by the examiner's statements in support of her conclusion that the rods of Hamano would not materially affect the method recited in appellants' claims. To the contrary, we find that incorporation of the support rods 12 of Hamano into the presently claimed method would materially affect the basic and novel characteristics of the method. For example, looking at appellants' figures 3a and 3b, certainly if the rods are incorporated into the depicted method, the rods would interfere with the ability of the thermoplastic material to deform as set forth in step (c) when the web backing is moved into and through the gap. The examiner has not explained how the rods would not interfere in this regard. The examiner simply states that the rods in Hamano are used to maintain the loops in the upstanding position. Yet, the examiner does not explain why the rods would not interfere with the method in a material way when the rods are incorporated into the method as depicted in figures 3a and 3b.

Hence, we agree with appellants' statement made on page 9 of the brief that the language "consisting essentially of" excludes the supporting rods required in Hamano.

We further are mindful of the discussion made on page 10 of the brief regarding the alternative embodiment of Hamano involving the use of a chemical solvent to chemically soften the top portions of the loops. We are in agreement with appellants' conclusions drawn therein also.

We have reviewed appellants' reply brief in which Dr. Miller's declaration is discussed. However, because we have determined that the examiner has not set forth a prima facie

case, we need not reach the issue of whether or not the showing of unexpected results discussed in appellants' reply brief is sufficient. In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987).

In view of the above, we reverse the rejection of claims 17-25 under 35 U.S.C. § 103 over Hamano in view Doleman.

II. The provisional rejection of claims 17-25 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over certain claims in co-pending Application No. 08/766,544 in view of Hamano

We will sustain the rejection under the judicially created doctrine of obviousness-type double patenting because appellants state on page 14 of their brief that they will file a terminal disclaimer to overcome this rejection.

Upon return of this application to the jurisdiction of the examiner, we call upon the examiner and appellants to handle this issue accordingly.

III. Conclusion

The rejection of claims 17-25 under 35 U.S.C. § 103 as being unpatentable over Hamano in view of Doleman is **reversed.**

The provisional rejection under the judicially created doctrine of obviousness-type double patenting rejection is **sustained.**

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Bradley R. Garris)
Administrative Patent Judge)
)
)
Paul Lieberman)
Administrative Patent Judge) BOARD OF PATENT APPEALS AND INTERFERENCES
)
)
Beverly A. Pawlikowski)
Administrative Patent Judge)

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